

REMARKS

Favorable reconsideration of the application is respectfully requested in light of the amendments and remarks herein.

Upon entry of this amendment, claims 1-23 will be pending. By this amendment, claim 17 has been amended; and claims 18-23 have been added. No new matter has been added.

§101 Rejection of Claim 17

In Section 2 of the Office Action, claim 17 stands rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. Claims 17 has been amended to address the rejection.

§112 Rejection of Claim 17

In Section 3 of the Office Action, claim 17 stands rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Claims 17 has been amended to address the rejection.

Allowable Subject Matter of Claims 1-16

It is appreciatively noted that claims 1-16 are allowed.

Newly-added Claims 18-23

In the Background section of the Specification, it was disclosed that “the technique of EP 0 881 782 A2 claiming the calculation of the phase of a signal of each antenna cannot be applied to the multicarrier case, but only to a single carrier case, as it is impossible to measure phases of received signals if there are more than two carriers. ... In single carrier applications the phase of

the signal changes frequently as the symbols are transmitted serially. Therefore it is difficult to compare phases between different antennas, as the phase is not varying uniformly. Therefore in single carrier applications a phase comparison is preferably done using pilot symbols which phases are varying uniformly or which are known. ... The channel parameter estimation is performed using a two pass process that advantageously expands the temporal scope and considers past, present and future temporal channel estimations during parameter estimation. Channel parameters are estimated by processing the signals through fast Fourier transforms, temporal filters and inverse fast Fourier transforms. The temporal filters optimize parameters estimation based upon instantaneous correlation of the received signals. This all takes place on the receiver's side of the OFDM system.” *Background of the Specification, page 1, line 26 to page 2, line 7.*

To address the above-described problem of the conventional communication devices, embodiments of the present invention provide communication apparatus and devices for receiving OFDM signals. For example, the structure of the communication device of claim 18, includes:

- a plurality of antenna elements* for receiving the OFDM signals which are transmitted by using a plurality of subcarriers of the multicarrier transmission system; and
- a processing device*, connected to said plurality of antenna elements, for processing said received OFDM signals, wherein said processing device calculates a subcarrier phase of each of said plurality of subcarriers respectively and adjusts said subcarrier phases so as to reduce a multipath fading in the multicarrier transmission system

(emphasis added)

Accordingly, in one aspect of claim 18, the communication device includes antenna elements which receive OFDM signals transmitted using subcarriers of a multicarrier transmission system; and a processing device which calculates a subcarrier phase of each subcarrier and adjusts the phase to reduce multipath fading in the multicarrier transmission system. None of the cited prior art references teach or suggest all the limitations of claim 18. Therefore, claim 18 should be allowable over the cited prior art references. Since claims 19-23 closely parallel, and recite substantially similar limitations as recited in, claim 18, claims 19-23 should also be allowable over the cited prior art references.

Conclusion

In view of the foregoing, entry of this amendment, and the allowance of this application with claims 1-23 are respectfully solicited.

In regard to the claims amended herein and throughout the prosecution of this application, it is submitted that these claims, as originally presented, are patentably distinct over the prior art of record, and that these claims were in full compliance with the requirements of 35 U.S.C. §112. Changes that have been made to these claims were not made for the purpose of patentability within the meaning of 35 U.S.C. §§101, 102, 103 or 112. Rather, these changes were made simply for clarification and to round out the scope of protection to which Applicant is entitled.

In the event that additional cooperation in this case may be helpful to complete its prosecution, the Examiner is cordially invited to contact Applicant's representative at the telephone number written below.

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The Commissioner is hereby authorized to charge any insufficient fees or credit any overpayment associated with the above-identified application to Deposit Account 50-0320.

Respectfully submitted,

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